

THE WAVEGUIDE

SAN BERNARDINO MICROWAVE SOCIETY NEWSLETTER

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PRESIDENT'S FEEDHORN

The year since March 2020 was long and difficult in more ways than I want to recall. At the March 2020 SBMS meeting when I was elected president, none of us had any idea that it would be our last meeting in Corona or in person for such a long time. Now we are beginning to see light at the end of the tunnel. (We're not at the end yet, we just see the light at the end).

The good news is that we are radio amateurs, and beyond all the internet and cell-based schemes people have to stay in touch during personal isolation, we all have amateur radio with long established means of communication, and are now understood to have been the world's first 'social media.'

In the urgency of the moment, we moved the April 2020 meeting to the Cactus Intertie (with a multitude of thanks to our colleagues there), while continuing coverage by ATN and thence to YouTube, as we customarily have when meetings are held at the American Legion Hall in Corona. Cactus being the nominal and majority conduit for microwave contest and QSO coordination in the region, this switch was natural. Gordo WB6NOA gave the first remote meeting Technical Talk over ATV and Cactus Intertie while continuing coverage by ATN and and thence to YouTube, as we customarily have when meetings are held at the American Legion Hall in Corona. Cactus being the nominal and majority conduit for microwave contest and QSO coordination in the region,

this switch was natural. Gordo WB6NOA gave the first remote meeting Technical Talk over ATV and Cactus from his shack at home in Costa Mesa.

As the stay-at-home situation stretched out, we added a Cactus-Zoom link (with a multitude of thanks to WA6CDR) and expanded the meetings online, incidentally picking up participation from many SBMS members or friends who are outside of the immediate region. For the record, I have compiled notes and attendance records from all of the on-the-air meetings (April 2020 through March 2021), which appear elsewhere in this newsletter.

I expect that SBMS will return to meeting in Corona sometime in 2021 and am looking forward to it. We are monitoring the local and regional situation and official directives and will make a plan to return when a sufficient number of our members feel they can safely gather again in person. We all understand and benefit from the in-person conversations and junk swapping that characterizes the meetings and will return as soon as it is safe.

[Courtney N5BF](#)



SAN BERNARDINO MICROWAVE SOCIETY OFFICERS & CONTACT INFORMATION

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 ham radio members.

The focus of the club is microwave activities in the Southern California. Our sister club is the San Diego Microwave Group (SDMG).

SBMS dues are \$15 per year, Dues can be handed to the treasurer at the meeting, or mailed to the address of the treasurer listed in the banner below. Meetings are first Thursday of the month, starting at 7:00 PM.

COVID-19 NOTIFICATION

Currently, the regular face-to-face monthly meeting has been suspended until further notice. However, SBMS still holds monthly interactive meetings on the 1st Thursday of each month via ZOOM virtual web meeting, and LIVE audio via the Cactus Intertie Radio System. Watch the meeting via LIVE streaming on Youtube.com on the ATN Amateur Television Network channel where you can also participate via the live chat!

For more information on our virtual club meeting and a ZOOM invitation, please contact Courtney Duncan N5BF at courtney.duncan.n5bf@gmail.com or W6IFE@W6IFE.COM

SBMS WEBSITE
WWW.W6IFE.COM

SBMS GENERAL EMAIL
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WA6CGR



ARRL Interface
Frank Kelly
WB6CWN



Newsletter
Steve Barden
WA6OXN



W6IFE Website
Frank Kromann
AG6QV

APRIL 2021 - SOCIETY MEETING PRESENTATION TO THE SOCIETY

For the April 1st, 2021 meeting of the San Bernardino Microwave Society, Doug Millar shall be conducting the presentation.

Dr.Doug Millar EdD. - K6JEY
drzarkof56@yahoo.com
(562)810-3989 cell/text



This topic will be on Receiver Signal To Noise Optimization. This will cover equipment and techniques to get the most out of your receiving system.

We will be reviewing harmonic distortion, SINAD, and noise figure meter techniques using both old and very modern equipment.

The presentation should be good for receiver systems from LF to "warm rocks". There will also be a focus on gain balancing microwave receiver systems.

This presentation may be made available as a powerpoint file, and possibly an MP4 file for download after the presentation.

Previews of the Technical Presentation

Basic harmonic distortion measurement setup.



Gain balancing a 23cm microwave setup with preamps.



2020 SOCIETY MEETING NOTES

Club Meetings - March 2020 through December 2020

SBMS meetings up through February 2020 were reported in newsletters which are available online at www.W6IFE.com.

March 2020

The March 2020 SBMS meeting was the last one held in person at the American Legion Hall in Corona, California and featured the election of 2020 officers. Marty N6VI gave a presentation encouraging us to bring more than just 10 GHz to the upcoming 2 GHz and Up competition. (The full minutes from March 2020 are available elsewhere.) Later in March, gathering restrictions were imposed by state, county, and local officials in response to the emerging COVID-19 virus pandemic. Beginning in April, SBMS meetings were moved to the Cactus Intertie (which has long been routinely used by members to coordinate microwave QSOs) with support, as always, from the Amateur Television Network (ATN) which forwards to local ATV repeaters, the MESH network, and YouTube. SBMS maintains its relationship with the American Legion Post #216 and will be able to return to meeting there when possible.

SBMS On-The-Air-Meetings March 2020 to March 2021

2020 April 2, 7 p.m. PDT.Meeting on Cactus Intertie with N5BF acting net control and 25 check ins. The Technical Talk was given by Gordon West WB6NOA live from his shack on Maritime Microwave Operation.

2020 May 7, 7 p.m. PDT.Meeting on Cactus Intertie with N5BF net control and 25 check ins. Technical Talk given by Roland Hoffman KC6JPG of Amateur Television Network (ATN) on local amateur television facilities and operations.

2020 June 4, 7 p.m. PDT.Meeting on Cactus Intertie with W6DL net control and 23 check ins. Talk given by Courtney Duncan N5BF, incoming president: The ... Society 2020.

2020 July 2, 7 p.m. PDT.Meeting on Cactus with N5BF net control and 28 check ins. Technical Talk was given by Dave Laag W6DL: Simple Amateur Microwave Receiver Performance Tests.

...continued...

receiver performance. A version of this talk was given among others by SBMS presenters at the IEEE International Microwave Symposium Amateur Radio Social Hour, August 4, 2020. Those talks and other programs mentioned here are posted at Presentation and Newsletter Archives (w6ife.com)

2020 August 6, 7 p.m. PDT.Meeting on Cactus with Zoom audio link added. Net control was N5BF with 26 check ins. The program was a round table discussion of 2020 operating plans for the August 15-16 and September 19-20 contest weekends.

2020 September 3, 7 p.m. PDT. Meeting on Cactus+Zoom with N5BF net control and 24 check ins. Private training given Zoom-only by Robin Critchel WA6CDR on proper Cactus use for coordination during microwave contesting. Also a review of operating sites in various parts of California.

2020 October 1, 7 p.m. PDT.Meeting on Cactus+Zoom with N5BF net control and 28 check ins. Technical Talk by Michelle Thompson W5NYV, a director of the Open Research Institute and AMSAT-North America: Open Source Amateur Radio and Satellite Service Opportunities.

2020 November 5, 7 p.m. PST.Meeting on Cactus+Zoom with N5BF net control and 35 check ins. Technical Talk by Steve Townes WB4ILW, Chief Technologist of the Jet Propulsion Laboratory Interplanetary Network Directorate: Deep Space Communications and the Deep Space Network.

2020 December 3, 7 p.m. PST.Meeting on Cactus+Zoom with N5BF net control and 28 check ins. Tech Talk by Brian AF6NA: SBMS 2020 Year Review, Microwave Communications and Social Distancing.

Tribute to long time member Chuck Swedblom WA6EXV (SK)



2021 SOCIETY MEETING NOTES

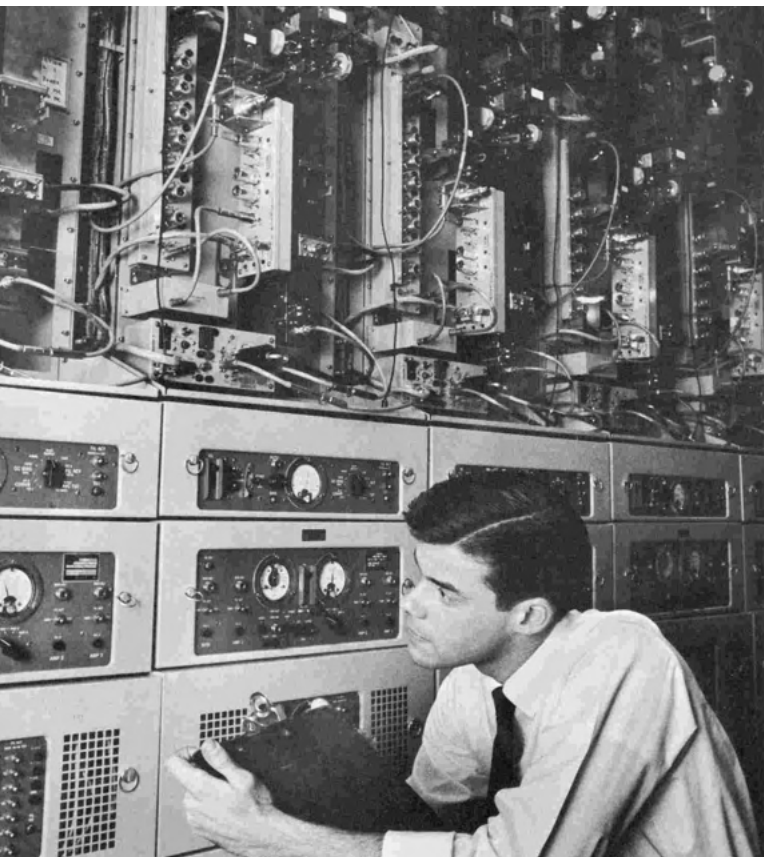
Club Meetings - January 2021 through March 2021

2021 January 7, 7 p.m. PST.Meeting on Cactus+Zoom with N5BF net control and 28 check ins. Memorial for W6OYJ (SK). Tech Talk by Robert KM6RXN: How I Got Started in Radio and Surplus Electronics.

2021 February 4, 7 p.m. PST.Meeting on Cactus+Zoom with WA6JBD net control and 30 check ins. Tech Talk by Courtney N5BF: N5BF 23 cm 3.8 m. Upgrade.

2021 March 4, 7 p.m. PST.Meeting on Cactus+Zoom with N5BF net control and 28 check ins. Tech Talk by Doug K6JEY: EME Analysis Tools.

Participants in these meetings included: N6ARA, KB6BA, N5BF, N8BSD, W6BY, N6CA, WA6CDR, WB6CWN, W6DL, WB6DNX, N7DPS, W6DQ, WX6DX, AF6EP, WB6FRM, AG6HF, K6HLH, KJ6HZ, WE4IAS, KN6IBW, W6IEE, KN6INN, N6IZW, WA6JBD, K6JEY, N9JIM, KC6JPG, W6KGE, W6KVC, WA7LKP, N6LL, W6MAF, N6MN, KK6MXP, AF6NA, N6NB, WB6NOA, W6NOB, W5NYV, WA6OXN, KC6QHP, W6QIW, K6QPV, N9RIN, N6RMJ, KM6RXN, W6SZ, N6VI, KN6VR, N6WL, WB4ILW, AN6FEG, WA5JAT, N6DD, K6CRB, WB4LMN, N8KH, and N7DA. (57)



Club Business Meetings - January 2021 through March 2021

2021 January 21: Zoom business meeting. Marty N6VI was authorized to begin the process of filing for 501.3c status for SBMS and Dave W6DL was authorized to begin work on an open architecture microwave beacon project.

Decision on the 2 GHz and Up competition for 2021 was deferred to a future meeting.

Reimbursements for memorials for WA6EXV and W6OYJ were authorized as was a donation to the Amateur Television Network to help with their ATN Van maintenance.

2021 March 18: Zoom business meeting was held for SBMS members with 19 in attendance.

Officers for 2021 were elected:

President – Courtney Duncan N5BF (incumbent)
Vice President – Robert Carter KM6RXN (incumbent)
Recording Secretary – Michelle Thompson W5NYV
Treasurer – Dick Bremer (incumbent)

The slate was elected unanimously by a show of hands of all present. Also continuing in official roles:

Trustee W6IFE – Dave Laag W6DL
Corresponding Secretary – Jeff Fort KN6VR
Newsletter Editor – Steve Barden W6OXN
Lab Manager, Legacy Webmaster – Dave Glawson WA6CGR
ARRL Interface – Frank Kelly WB6CWN

Following the election, the following topics were discussed:

Status of the Society's 501.c3 filing.

Decision to go ahead with this year's 2 GHz and Up competition May 1-2 and to publicize it.

A lengthy discussion of the open design beacon architecture and software mostly between W6DL and N6CA with several others contributing. Dave W6DL will be acting as the club liaison for this project.

COMMENTS ON THE 2020 10GHZ AND UP CONTEST

BY W6DL

First, a bit of housekeeping. With this newsletter we transition from Brian Thorson, AF6NA, to Steve Barden, WA6OXN. Thank you Brian for your service to the SBMS as newsletter publisher. As you may learn this isn't Steve's only newsletter so he will bring his own style to the job. So without further adieu please welcome Steve to the post.

2020 will be a year that will be remembered like 1941, 1963 and 1969. The Covid19 virus impacted everything around us. The impact to Amateur Microwave is trivial as compared to the loss many families have felt. But nonetheless it did impact the contest and we are grateful to those who ventured out of their "bunkers" to participate.

The first weekend produced "once in a decade" conditions as very warm air settled in over the lower part of California providing a line of afternoon thunderstorms all along the coastal mountains and San Joaquin Valley. Saturday was just a tease as a large storm cell formed over the Apple Valley area provided a rain-scatter pipeline from Southern California to Robin, WA6CDR, working all takers from Upper Potosi across the Nevada border. To everyone's delight stations in the Los Angeles basin worked Robin using NBFM to remove the severe amplitude hits from the moving pieces of ice.

And Sunday conditions were even more spectacular. Around noon a line of thunderstorms from Arizona to San Francisco began to mature. All forms of paths, difficult under normal conditions, were worked with ease. Everybody has their favorite contact made during the enhanced conditions. Mine was from N9JIM at Loma Prieta to my location in Temecula, a path length of over 580 km requiring NBFM. From this spot I could easily hear stations in the San Joaquin Valley. In addition I heard beacons on Mt Vaca and White Tanks with full quieting signal levels (yes, the dots and dashes of CW can be full quieting). About mid-afternoon the storms began to rain themselves out and we had to rely again on standard methods to complete contacts.

Those storms had an impact that lasted until the second contest weekend. Fires started by lightning striking in extremely dry brush began to rage all across the State of California.



COMMENTS ON THE 2020 10GHZ AND UP CONTEST

...CONTINUED...

By the time weekend two came along the Federal Government had closed all national parks to access. Contest favorite sites like Frasier Mountain became off-limits to microwaver's.

At no time did this concern me. I drew from an experience in the closing hours of an early 1990s 10 GHz. Contest. I was sitting adjacent to a farmer's alfalfa field somewhere North of Shafter with my 4' dish point southward. The sun was setting off of my right shoulder and the warm and humid Valley air was beginning to give signs of cooling for the evening. Ed Munn, W6OYJ, was set up near his house in Point Loma, looking North. Ed turned his carrier on and I immediately heard it. His carrier was steady and not fading at all nor did it have the characteristics of airplane scatter. Neither of us were on a mountain top.

To the best of my knowledge this was the first 10 GHz. contact where both stations were at essentially ground level exploiting the Frasier Mountain knife-edge path. Since that time this has become a mainstay of microwave operation from stations located in the LA Basin and along the coastal plain to the Mexican Border (and beyond) communicating with station roving in the San Joaquin Valley.

During the second 2020 contest weekend conditions were what I call average. Drawing upon my experience 30 years prior I set up in a location that looked North from Orange County. I was able to work without difficulty any and all rovers that were operating in the Southern San Joaquin Valley. This is the area South of Harris Ranch. Stations at the Patterson Overlook were workable but focused operation was a requirement. Later in the day I was able to work the only Central California mountain on the air, Mt. Diablo. This was a successful day.

Finally, Sunday was spent on a small hill in the high desert between Adelanto and Kramer Junction. I spent the day there with Mel, WA6JBD, and we were able to work any station we could hear. Again, this was another successful day under normal 10 GHz. conditions.



COMMENTS ON THE 2020 10GHZ AND UP CONTEST

...CONTINUED...

There is a point to all of this. Thirty-five years ago an SBMS member was attending an Amateur convention where someone pointed out that "in California you have all of those mountains".

Some complained of only having rolling terrain with forests while others had flat plains to the horizon and beyond.

Our member replied that "yes we have mountains and by God we are going to use them". It's a great expression but perhaps not as true today as it was back then. The state of the art has progressed to where rain scatter contacts are just as likely to produce long distance results as mountain top contacts are. Rain scatter occurs everywhere in North America and if your read microwave activity reports from across the country it is being exploited more and more. So we may have the bigger mountains but they probably have more rain scatter everywhere else.

The playing field is more even than once thought.

73s, Dave



"OLD YELLOW JACKET"

A TRIBUTE AND RECOLLECTION OF ED MUNN W6OYJ

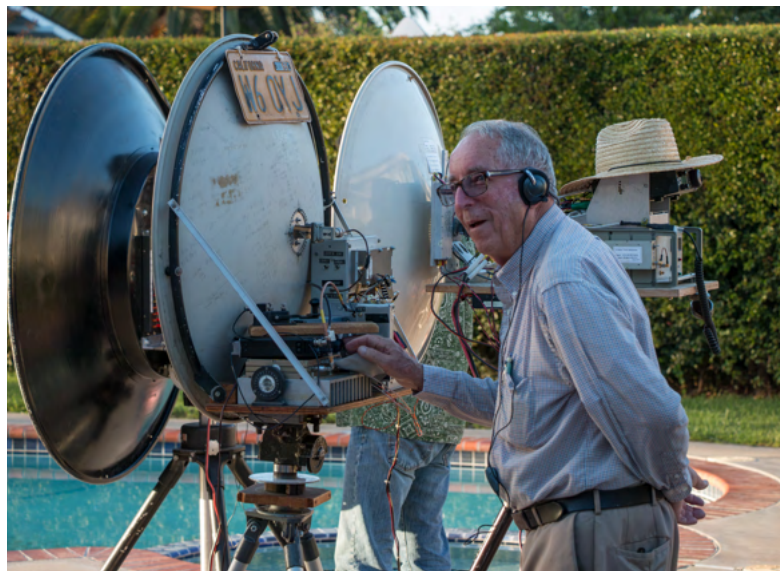
by Dave Laag W6DL

By now most of you have heard of the passing of Ed Munn, W6OYJ, this past Monday. Like all of you I am really saddened by his passing. From the perspective of the San Bernardino Microwave Society (SBMS) his loss, similar to the recent passing of Chuck Swedblom, WA6EXV, is particularly significant. These two men formed unique anchor points for the SBMS and it's on the air activities. Both will be missed greatly.

Ed could be considered a founding member of The Society. He wasn't at the planning session in early 1955 or the first couple of meetings but I believe me made it to the third meeting. He was continuously active in The Society since that time with the word "active" meaning both through meeting attendance and participation and also on the air activity.

In September of 1958 Ed was operational on all of the core microwave bands, 3, 6 and 8 cm (the 9 cm relocated band). He and Vern W6SDE made a Microwave DXpedition to Crestline and worked all available stations in the Inland Empire. Transmitting with his Pola-plexer set to 3,535 Mc/s he completed QSOs with stations in Ontario, Pomona, Box Springs Mt. and for the greatest distance with Tommy W6IFE/6 42 miles (68.5 km) away near Lake Elsinore (without liaison). His rig touted a "low noise" IF using a WE 417A preamp tube. Ed recounted that it was so cold a cup of coffee froze relatively quickly even when spiked liberally with "microwave anti-freeze" (no reference to the formulation is available in the various Klystron catalogs I have). During the 1960s Ed participated in many microwave DXpeditions exploiting many paths across Central and Southern California. This activity culminated with a major microwave DXpedition in 1970 with six SBMS members participating. Dick K6HIJ and Marvin W6DSL traveled to Mount Hamilton near San Jose in the

San Francisco Bay Area and operated as K6HIJ/6. The other end of the desired path, located at Breckenridge Mountain near Bakersfield, was held down by Ed W6OYJ, John W6NVV, Gordon WA6ZKY and Bill WA6QYR, operating with call signs of W6OYJ/6 on 6 cm and W6IFE/6 on 9 cm. Both ends of the attempt were equipped with ROCKLOC.



On the 18th of June strong signals were exchanged on 9 cm over the 214 mile (344.5 km) path breaking an earlier record of 190 miles (305.9 km, set by Tommy W6IFE and Bill W6VIX on July 9, 1956). On this same day an earlier record of 179 Miles (288.19 km) on 6 cm was broken using this same path. 3 cm would have to wait. The San Bernardino Sun newspaper covered the story.

During the early years Ed lived close to his work at the Naval Weapons Center in Norco, Ca. He later relocated to San Diego to follow his career in the defense industry there. Nonetheless he still commuted back to Corona each month to participate in the SBMS meetings. During the years I first attended SBMS meetings and later after becoming a member I rarely recall him missing a pre-meeting dinner or meeting. He was always friendly with a smile on his face and ready to share his knowledge with you.

"OLD YELLOW JACKET"

A TRIBUTE AND RECOLLECTION OF ED MUNN W6OYJ

...continued...

1986 marked another significant operating year for Ed. The microwave community in Southern California begun to adapt 3 cm "Sol Fan" motion detectors to Amateur Radio use while others were using the newly introduced Microwave Associates Gunnplexers.

Ed adopted a Sol Fan Gunn oscillator to his existing 3 cm wideband Pola-plexer hardware and was ready to see what could be worked. An opportunity arose for a contact with Chip N6CA who had just completed his Gunn system with a Cassegrain fed dish. The path would be from Mt. Soledad to Palos Verdes.

The run-up to this historic contact became notorious, at least between Ed and Chip. It's my understanding that Chip was running linear polarization and preferred to be horizontal as was the custom in the weak signal VHF/UHF community. What Chip didn't know was that Ed was running his classic SBMS Pola-plexer with its round feedhorn and with the Gunn oscillator coupled at a 45 degree angle to horizontal. Ed could work microwave operators of any polarization just as he had done in the Klystron era but presently with a small reduction in signal strength for linearly polarized stations. Nonetheless the contact was completed with good signals at both ends ushering in a new era of Solid State rigs on the "1.14 Inch" (3 cm) band. Also happening in 1986 was the first ever ARRL 10 GHz. cumulative contest. Still using his Pola-plexer hardware Ed won with a score of 3,763 points coupled with his 40 QSOs, 18 unique call signs and best DX of 171 Km (106.2 mi). In 1987 Ed repeated as winner of the ARRL 10 GHz. cumulative contest coming in ahead of the pack with 10,536 points from 84 QSOs, 37 unique call signs and a top distance of 315 Km (195.65 mi).

I have two favorite contacts with Ed in my log book. The first occurred during the ARRL 10 GHz. cumulative contest, probably during 1991. Ed was at home near Point Loma in San Diego and I was in the lower San Joaquin Valley parked next to an alfalfa field in the outskirts of Shafter. It was just after sunset and on a whim Ed and I began to swap carriers. We heard each other weakly but only on the direct path. Signals were steady and repeatable and with no apparent enhancement other than knife-edge diffraction. This contact proved that there was some sort of microwave magic occurring over the Frasier Mountain area. The path between the lower valley and the LA basin and south along the coastal plane to San Diego is now being exploited for many contest points and grid squares by Microwave operators with even modest stations.

The second of these contacts took place a few years back and also during the ARRL 10 GHz. and up contest. Working from memory I believe that Dan K6NKC helped Ed get on the air for the second weekend of the contest (If I have this wrong somebody please correct me as I want to make sure that everyone participating in this activity receives proper recognition). Ed was able to operate in his last contest because of this.



"OLD YELLOW JACKET"

A TRIBUTE AND RECOLLECTION OF ED MUNN W6OYJ

...continued...

It was clear to me at the time that this would likely be the last ever over the air contact I would have with Ed. I didn't want to place any emphasis on this as I wanted the experience for Ed to be as natural and routine as possible. After my contact, Ed went on to work other stations in the contest. I am very grateful for that one last opportunity to get his call in my log book. For those who helped make this happen I would like to express my extreme gratitude.

Ed was one of the very first contacts in my microwave log book and a frequent repeat and I was honored to be one of the last entries in the "Old Yellow Jacket" log book.

To end this on an upbeat note, Ed and I had a running gag during the contest.

During the 1940s Ed's family had a mining claim at Sierra Peak.

The photo of Tommy Thompson, W6IFE, shown in the QST article was taken near this location.

I really enjoyed operating from that site (my experience goes back to ARRL Field Days spent there). If I was at Sierra Peak when Ed and I would work during the microwave contest he would ask me to look over his mining claim while I was there.

I would always ask Ed if I had permission to be there operating Amateur Radio on his claim.



Ed Munn W6OYJ accepting the
Don Hilliard Award for Technical Contributions to the Microwave Community
Microwave Update 2015

SBMS MEMBER PROJECTS & PHOTO'S

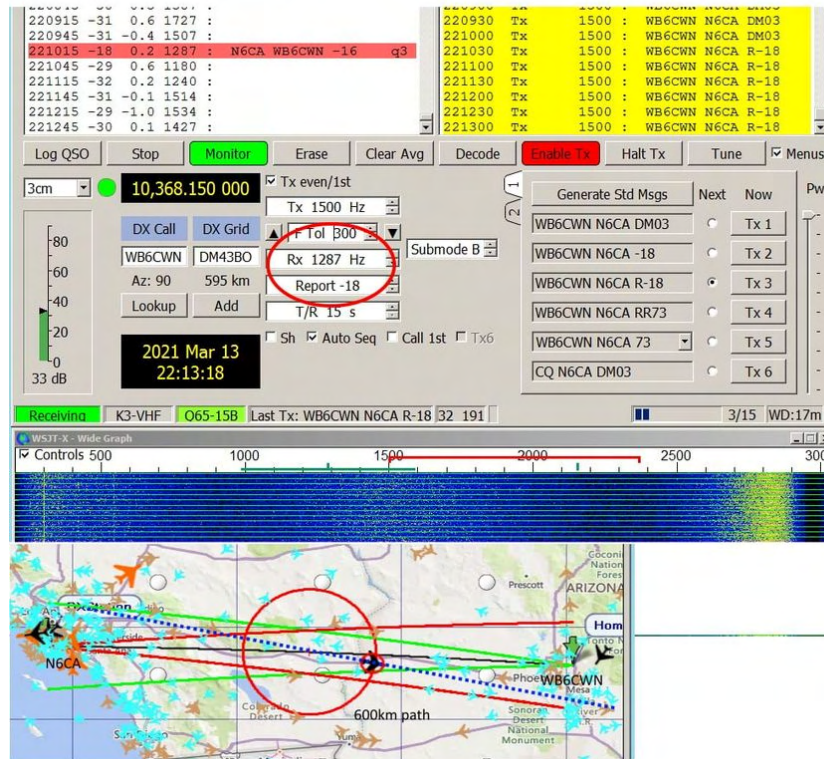
{ WANTS, NEEDS, ASSISTANCE, AND ITEMS FOR TRADE OR SALE }

N6CA Chip - Great sigs from N6RMJ and WB6CWN on 10GHz airplane scatter at 374 & 600 km using Q65B digital mode. This is very typical for all of us.

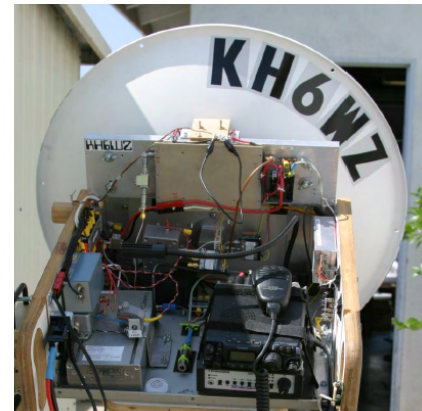


N6CA Chip - Is also working on microwave beacons that will feature digital modes that may allow for some user interaction. For more information, contact Dave W6DL who will be acting as a liaison to the society for this effort. This is so N6CA does not get distracted
(Maybe we can get a presentation once prototypes are functional;)

We Tx on 1500 Hz each end of path... aircraft map below had great alignment for short opening. It had a Radar Cross Section of 41 which is rather small. 747 has RCS of 61 so we were surprised at the decodes both ways



WA6OXN Steve - Has acquired KH6WZ Wayne's vintage 10ghz "Morpheus II" rig and is working on refurbishing it back to working condition with SSB and digital mode capability.

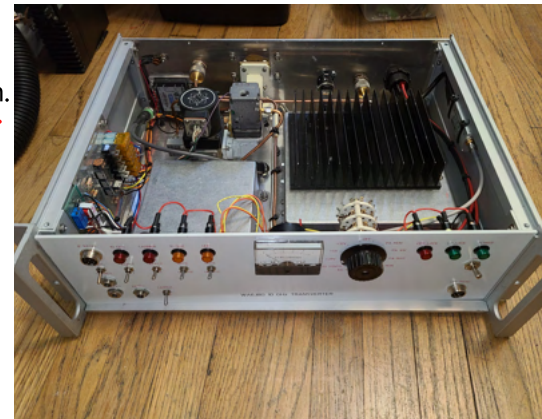


WA6JBD Mel -



Created a custom, engraved FEEDTHROUGH panel for his QTH to support all of the coax cabling, **AND** WR90 waveguide. Fabrication details to follow...

in addition, Mel has been working on a new 10ghz transverter system.



SBMS MEMBER PROJECTS & PHOTO'S

{ WANTS, NEEDS, ASSISTANCE, AND ITEMS FOR TRADE OR SALE }

W6DL Dave - My activities are focused on doing 10 GHz. EME, so everything to date is in preparation for that. I have a 6' dish, 35W of RF power and now digital modes to accomplish this. Presently the German EME beacon is down so I haven't tried to decode an EME signals yet. There is a big burst of energy right now to get many stations up and running on digital.

Pat, N6RMJ, Frank, WB6CWN, CH1P, N6CA, Courtney, N5BF and Rein,W6SZ are all in the process. All are moving towards using digital home to home, in the contest and ultimately for EME.

This push for digital has resulted in widespread Saturday afternoon microwaving sessions between CH1P, at home in Lomita, Ca, Frank in and around Scottsdale, Az, and Pat, hilltopping around his home area of Bullhead City, Az, with all stations swapping digital contacts across the intervening mountains and desert. Contacts seem to be fairly easy except between Pat and myself, a path that runs directly over the top of Mt. San Jacinto.

N6RMJ Pat - If Pat can get the shipping company to NOT bend his new Rohn tower sections before they get to his QTH, he will be able to reestablish his new tower, complete with guy wires, that will be impervious to the wind gods of Bullhead City.



K6JEY Doug - Has acquired a new Umbrella dish and mount. He reports the he recently bought a 6' dish from W2HRO. Great service and excellent dish. It is made of silver plated lycra, so you have to be careful with how you handle it.

WA6OXN Steve - Has a new test set, an Agilent E7495A cell base station analyzer. It's usable for amateur radio applications up to 2.7ghz. Although from the manufacturer this test set has limits, the interesting thing is that the operating system (Linux) and onboard applications are all written under GPL open source licenses. There is an user group community on eevblog.com that are actively "hacking" the instrument. Coaxial TDR, Single and 2-Port VNA Measurements, supports HP/Agilent Power Sensors, waterfall display or conventional spectrum analyzer display, CW signal generator, battery powered, cool Agilent backpack. And these units can be had relatively cheap... I acquired mine from ebay for \$330.00 shipped.



Home to Home - Wednesday Evening (Before the Monthly Meeting)

- 10,368.100 MHz - Calling Frequency {Please refer to Odds & Ends for more information}

Notes from previous HOME-TO-HOME events:

I was on the home to home September 17 not expecting to hear anyone because the contest was so close. Pat N6RMJ was down in DM13ab and we were able to work on some sort of a bounce. This week, I unloaded after the contest and set up in the yard before putting the rig away today. Thursday evening, no one else was on - I checked Cactus and the reflector - nada... However, I did some tests and located the towers that I hear Frazier reflections off of, and from which I've worked you in the past, so I'm ready to try those again. 73 Courtney N5BF

Hi Robert,

Activity report for Saturday... Attempted to work Pat, N6RMJ. Nothing heard in either direction. Did a one way transmission test for Dave, W6DL and Jim, KK6MXP. The one way signal was received. Mel - WA6JBD

On 7/25/2020 2:49 PM, Courtney Duncan wrote:

Set up at 11:00, looked for the beacon on the moon. Pointed at the moon through the trees but did not hear anything but noise. Did hear PV and Frazier beacons as usual, 59 and 51 respectively, as usual so the rig was working as usual. Did not work other stations. Secured at 13:00 PDT.

Hi Robert,

Good to work you tonight and here's my report...

I worked you, and exchanged tones with John Oppen, KJ6HZ but he was too weak to make contact. Attempted with N5BF and N6RMJ, but nothing heard in either direction.

That's it! 73, Mel - WA6JBD

John KJ6HZ DM13hx

I got set up about 15 minutes late in a spot that only sees Southeast thru southwest. Only beacon heard was Heaps Peak on a bounce. Worked Robert KM6RXZ DM13IX SSB.

Heard Mel, WA6JBD's carrier S3 but he could barely hear my 200mW. Listened for Pat, N6RMJ but nothing heard.

Also unable to hear Courtney N5BF.

from Courtney Duncan N5BF...

N6TEB, Dave at home in DM03ww. This was not arm chair but was a nominal slightly challenging microwave contact in medium conditions.

KM6RXN, Robert at home in DM13hx. Robert lives in a hole and has trouble working microwave out of there at all, but was bouncing his quarter watt off Santiago and does work people, at least people who are closer than me.

After 30-45 minutes of trying first round, we gave up, neither of us having heard the other at all. But see next.

The reason I'm sending this report at all is to report a surprise. If you run Radio Mobile on my QTH (as Mel has) you'll see that I only really see due south. I have a direct view (from DM04vf) of Palos Verdes, Catalina, and nothing else. Not even San Diego (not direct path anyway). I live about five miles below Secret Site Two (in northern DM04vf and 2000 feet higher) which has much better visibility and from which the San Diego beacon can be easily copied, and Frazier on a bounce from somewhere. So, from home I wasn't expecting anything. But, looking round for Frazier Beacon, I heard it at a bearing of about 250 which looks straight at a tower on a peak about five miles across the freeway from here. Indeed, there are two peaks right together for the Frazier beacon there and, if you look over across the freeway, two towers, right together. Hmmm..

AF6NA, Brian in DM13fw. So, I spent 45 minutes trying to work Brian.

First I looked off in the Santiago direction. When the beacon is on over there I can hear it, barely through the trees and over a nearby hillside.

So Brian would light up Santiago and I could hear him but it wasn't enough for a QSO. Then we tried Palos Verdes. The PV beacon is back on and 20 over 9 to me. I can see it in all directions but the peak is obvious and Isat there lighting that up while Brian searched. Nothing heard from me on .100 or the beacon on .300 on his end. Then I mentioned about this Frazier refraction I was experiencing and turned around west (towards San Fernando, not Corona) to light that up. While Brian was searching, Dave N6TEB came on coordination and says, "who has a beacon on .100? It was me. Then Robert, now pointing at Baldy, chimed in that he was hearing it too. I immediately broke off with Brian and completed with Robert! Yes, with some difficulty.

The N5BF KM6RXN QSO was completely unexpected on both sides and was clearly a double hop out of two bad locations. Then went back to Brian, nothing heard, and suggested we try the direct route again. After 15 minutes of repeats we finally completed on the very tough Santiago bounce path. Yes, it would have been easier (but not "easy") on CW. So I saw things work yesterday that I didn't expect and hadn't even tried to plan for. I wouldn't want to depend on any of these paths for important or reliable communication but they were good enough for contest credit!

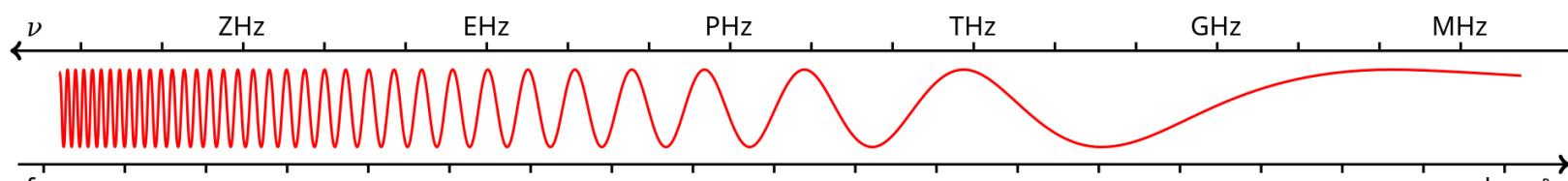
As Pat would say, "You don't know it doesn't work until you've tried it."

So, now we've tried it and it did work, against all odds!

73 Courtney N5BF DM04vf

2021 EVENT SCHEDULE

- April 1 SBMS Meeting - ZOOM Video Conferencing
- May 6 SBMS Meeting - Stay Tuned for the Latest Information
- May 1 CSVHF Microwave Spring Sprint (902 MHz & Up)
- May 1 - 2 SBMS 2 GHz & Up Contest
- May 17 - 19 Maker Faire, San Mateo, CA (EVENT CANCELLED)
- June 3 SBMS Meeting - Stay Tuned for the Latest Information
- June 12 - 14 ARRL June VHF Contest
- June 26 - 27 Field Day
- July 1 SBMS Meeting - Stay Tuned for the Latest Information
- July (date TBD) SBMS Microwave Tune-up
- August 5 SBMS Meeting - Stay Tuned for the Latest Information
- August 7 - 8 ARRL 222 MHz & Up Distance Contest
- August 21 - 22 ARRL 10 GHz & Up Contest - Part 1
- September 18 - 19 ARRL 10 GHz & Up Contest - Part 2
- September 29 - 30 ARRL EME Contest, 2.3 GHz & Up
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- [illegible]



MICROWAVE BEACONS CALIFORNIA - ARIZONA - NEVADA

Southern California

Heaps Peak	2304.320 MHz	W6IFE/B	.5W (+27dBm)	
	Grid: DM14kf	Lat/Long: 34°14' 5", -117°8' 26"	Altitude: 6435'	
Heaps Peak	10368.330 MHz	AF6HP	2W	
	Grid: DM14kf	Lat/Long: 34°14' 5", -117°8' 26"	Altitude: 6435'	
Frazier Mtn.	10368.310 MHz	N6CA/B	1.3W	
	Grid: DM04ms	Lat/Long: 34.7751, -118.96948	Altitude: 8027'	
Santiago Peak	Beacon Relocated to Heaps Peak			
	Grid: DM13fr	Lat/Long: 33.7109, -117.53401	Altitude: 5681'	
Palos Verdes	10368.300 MHz	N6CA/B	1.6W (Out of Service)	
	Grid: DM03ts	Lat/Long: 33.7676, -118.37642	Altitude: 1200'	
Mt. San Miguel	Grid: DM12mq	Lat/Long: 32.6979, -116.93516	Altitude: 2500'	
	10368.360 MHz	K6QPV/B	1W	
	5760.300 MHz	K6QPV/B	2W	
	3456.300 MHz	K6QPV/B	10W	
	1296.300 MHz	K6QPV/B	12W	

Northern California

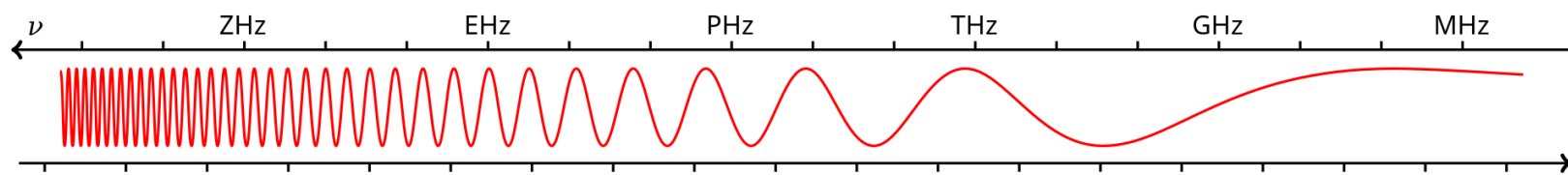
- The newsletter editor is looking for information on working NorCal beacons. Thanks!

Arizona

White Tanks	10368.375MHz	W7ATN/B	2W	
Bullhead City	All 10ghz Freqs!	N6RMJ Pat Coker (Unofficial Arizona Beacon)		
	Grid: DM25RE	Lat/Long: 35.1847, -114.53298	Altitude: 541'	

Nevada

- The newsletter editor is looking for information on working Nevada beacons. Thanks!



SAN BERNARDINO MICROWAVE SOCIETY ODDS & ENDS

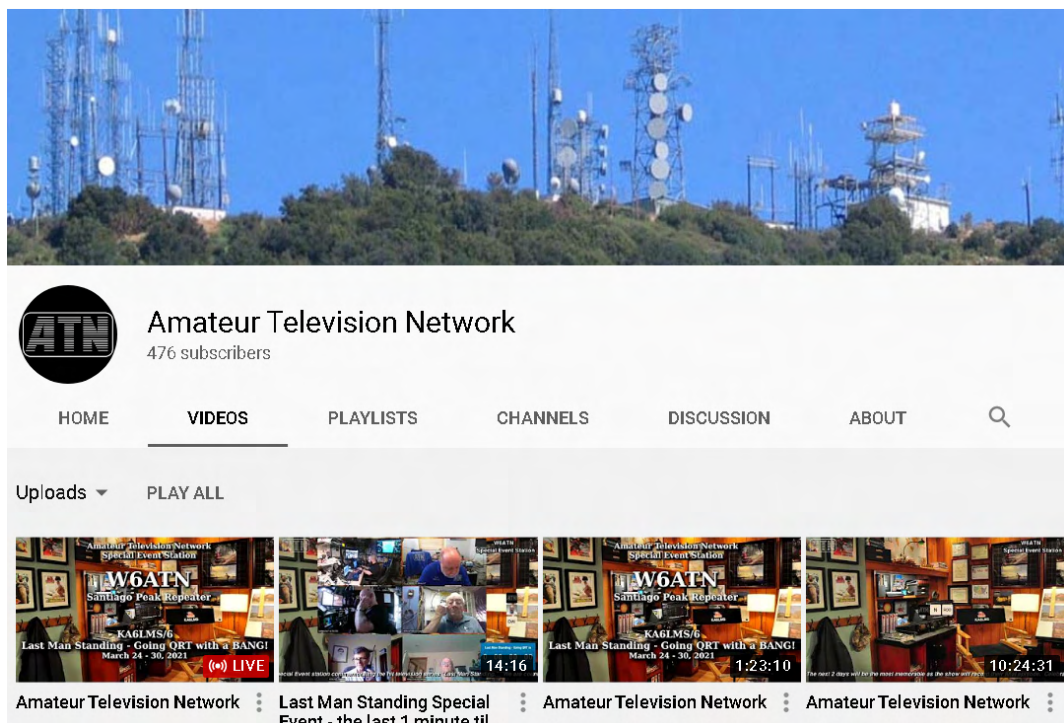
SBMS Zoom & Future Live Meeting Streamed Live on YouTube !!

SBMS members and HAMS throughout the world should be very glad the Amateur Television Network has made it's content available LIVE via the YouTube streaming service.

To access our Amateur Television Network's live stream, go to YouTube (<https://www.youtube.com>), and search for "Amateur Television Network". When it is the evening of the meeting and Roland has made the connection over the internet, you will see the familiar ATN logo and the words "LIVE NOW" box appearing in the description.

Just click the screen and you will be watching our live feed. When you get there to watch or even if you go there now, click on "Subscribe".

Subscribing is necessary to use the youTube comment section as a kind of chat system where you can interact, be a part of the rollcall, and "attend" the SBMS meeting.

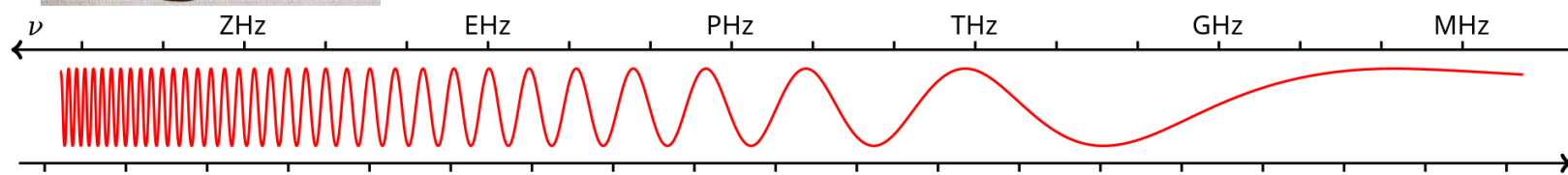


SBMS "Dinner-Before"



"Dinner-Before" is like a people capacitor in that it is a gathering place for those who are trying to head to the monthly society meeting and beat that SoCal traffic. Some arrive as early as 4:00pm. Drop an email note to the reflector for more info or to announce your coming in early, or use the Cactus Intertie System and give a shout out when you are heading in...

- Just a note, this was typically at the Sizzler, however that location is permanently closed. Recommend a new location at the April 1st Zoom Meeting !! (The editor recommend the Corona Airport Cafe !)



SAN BERNARDINO MICROWAVE SOCIETY ODDS & ENDS

Home to Home - Wednesday Evening Before the Monthly Meeting

Rein Smit, W6SZ (based in Alta Loma), Past President of SBMS is encouraging all Southern California microwave hams to try contacting each other from their QTH the night before the SBMS meeting. The intent is to learn home to home capabilities and to discover tricks to use them.

- 10,368.100 MHz - Calling Frequency SSB, CW, FM, and Digital (basically any mode) will work.
- Please make sure to send a follow up report (successful or not) to V.P. Robert Carter KM6RXN,
- email: laserdog3@juno.com. Please include your callsign, name, date, time, and general location.

WA6JDB, N6RMJ and W6SZ will be looking & listening for your signals along with other society members. For coordination and liaison, we will use the LARA/Cactus repeater located on Heaps Peak, so our desert participants can check in also. Newcomers are welcome ! Receive only setups are welcome !!

We'll be listening to Cactus/Heaps starting at around 20:00 PDT and going until the last person gives up.

- Repeater frequency is 448.860 out / 443.860 input / PL 100.0
- It will be configured in a standalone mode so it does not bother the rest of the Cactus Intertie System.

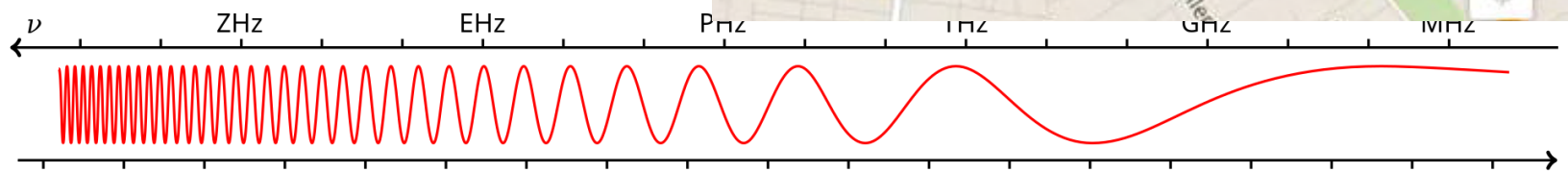
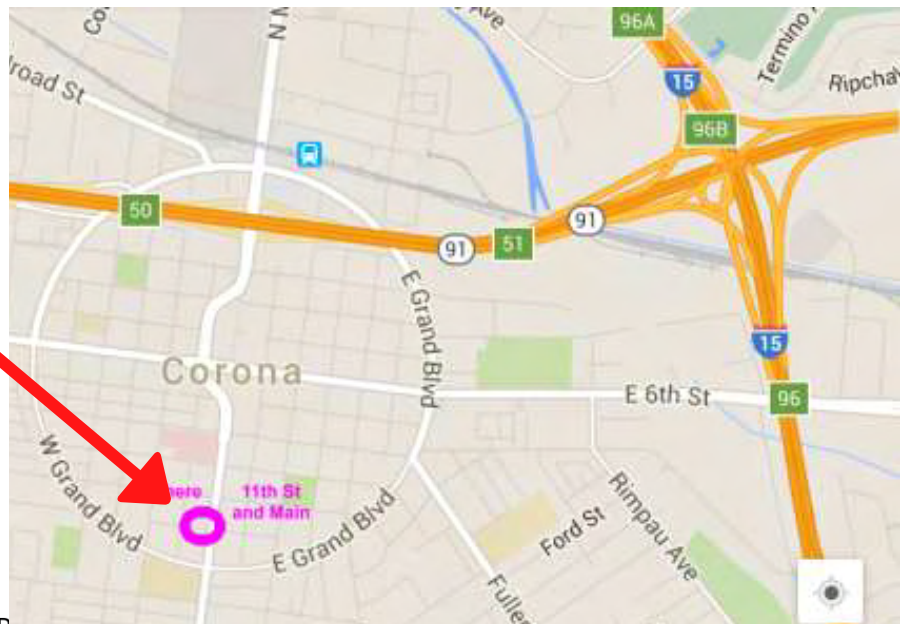
SAN BERNARDINO MICROWAVE SOCIETY - MEETING LOCATION

When FACE-TO-FACE Meetings Start, they will be on the first Thursday of the month, officially starting at 7:00 PM. All are welcome to come early to assist with meeting setup, fellowship, technical assistance, or the bringing of surplus items to give-a-way, trade or sell !

Bring your latest project with you, a cool piece of microwave gear, or test equipment to share !

American Legion Post 216
1024 S Main St, Corona, CA 92882

For more information, or to Carpool from North Orange County, please contact:
Dick Bremer WB6DNX - 714-529-2800
rabremer@sbcglobal.net





SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1969

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE OUR HEADS